

Day roost of Little Pied Bat *Chalinolobus picatus* (Gould) (Microchiroptera: Vespertilionidae) in north inland New South Wales, Australia

Michael Pennay¹ and Jade Freeman²

New South Wales Department of Environment and Conservation, PO Box 211 Dubbo NSW 2830.

¹michael.pennay@environment.nsw.gov.au ²jade.freeman@environment.nsw.gov.au.

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The Little Pied Bat *Chalinolobus picatus* is listed as a vulnerable species in NSW under the *Threatened Species Conservation Act* (1995). Very little is known of its roost habits, however it has been assumed that it roosts in trees because it is often captured in areas where caves are absent (Ayres *et al.* 1996). This assumption is supported by observations by Schulz *et al.* (1994) of *C. picatus* using a tree hollow after release in Queensland and a radio-tracking study in the South Australian mallee where several tree roosts were recorded by Dominelli (2000).

This note describes observations of a day roost used by *C. picatus* from the eastern part of its range near Wambadule flora reserve in the Pilliga West State Forest, northern inland NSW (30°32' 05" S, 148°40' 20" E).

Several bats were observed in flight by the authors at midday on the 9th December 2003 whilst driving through Pilliga West State Forest; the temperature was 36° C. Once stationary, we were easily able to identify the bats as *C. picatus* by their distinct black and white markings and small size. Approximately 10 individuals were observed flying in loose circles around a large tree. The bats were seen flying into and out of two hollows on either side of this tree. After a period of about 2 minutes all of the bats had flown into the hollows and did not re-emerge, although 'chattering' could still be heard from both holes.



Figure 1. Its distinctive black and white pelage and small size easily identify the Little Pied Bat *Chalinolobus picatus*.

The roost

The roost tree was a large, living Bimbil Box tree *Eucalyptus populnea* ssp. *Bimbil*, approximately 600 mm in diameter at breast height with several hollows of which the bats were observed using two. These two hollows were both similar in external size and position on the tree with the exception of aspect; one opening was on the western side (marked "a" in fig. 1), and the other on the north eastern side of the tree (marked "b" in fig. 1).

Both hollows had an opening of approximately 20cm diameter, the hollow entrances were caused by breakage of dead limbs, the break having formed a spout in the remaining part of the limb. Both limb spouts were at angles slightly greater than horizontal. Both hollows were approximately 10-15 metres above ground - emerging immediately above the midstratum layer of predominantly Wilga *Geijera parviflora* and immature White Cypress *Callitris glaucophylla*.



Figure 1. The roost tree (*Eucalyptus populnea* ssp. *bimbil*), with arrows indicating the entrances to the hollow spouts used by *Chalinolobus picatus* (A, western facing. B, north east facing). Photographs: Michael Pennay.

The roost tree was estimated on visual observation to be one of the largest mature trees scattered sparsely throughout this part of the forest. This observation is consistent with the pattern of selection for large trees as roosts in other tree-roosting members of the genus *Chalinolobus* (Lunney *et al.* 1985, Lumsden *et al.* 2002) and other microchiropteran species within Australia and worldwide (Lumsden *et al.* 2002, Kunz and Lumsden 2003). The roost also shares some similar features to a roost used by *C. picatus* described by Schulz *et al.* (1994). In both observations *C. picatus* used hollowed out spouts approximately 10m above ground level. The roost we observed differed from the six *C. picatus* roosts recorded by Dominelli (2000) and the single roost recorded by Schulz *et al.* (1994) in that they were all in dead trees.

Although the tree we observed was still living, the actual branches used were dead.

Whilst it appeared that the bats were only departing and alighting from the hollows in this single tree, caution is required when interpreting the significance of this observation as diurnal activity of bats is uncommonly observed and may be atypical behaviour. It is impossible to know if the bats had been disturbed, how far they may have flown, if the bats were merely seeking shelter at the nearest suitable point, or if this was natural behavioural response to the hot conditions. Nevertheless it was clear that the hollows observed were used as a diurnal shelter for a significant number of bats on this occasion, regardless of the reason(s) the bats initially left their roost.

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